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Necessary and Sufficient Conditions for Purchasing Halal Skincare: Extending the Theory of Planned Behavior

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Abstract: *This study aims to comprehensively analyze the factors influencing the purchasing intentions and attitudes of Indonesian Muslim youth toward halal skincare products. Utilizing the Theory of Planned Behavior (TPB), it integrates both external and internal components, including halal certification, halal literacy, and religiosity. Data were gathered from 233 Muslim adolescents, and the proposed model was evaluated using partial least squares structural equation modeling (PLS-SEM) to analyze net effect factors, followed by necessary condition analysis (NCA) to identify critical components. The outer loading values of PLS-SEM range from 0.736 to 0.945, indicating that the indicators used have a strong and reliable contribution to the constructs they represent. The research results indicate that the net effect analysis demonstrates that the dimensions of TPB and halal literacy significantly influence the purchase intention of halal skincare products. The NCA results indicate that Attitude (9.4%) and Perceived Behavioral Control (65.3%) play a crucial role in influencing consumers' purchase decisions for halal skincare products, with PBC being the most significant determinant. Halal Certification (16.5%-25.6%) serves as a key prerequisite for fostering a positive attitude, while Subjective Norms (5.8%-45.5%) become more influential once a fully established positive attitude is achieved.*
Keywords: *halal certification, halal skincare, purchase intention, theory of planned behavior*

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1. Introduction

With the growing demand for halal products, Muslim consumers constitute a significant economic force. According to the Pew Research Center (2017), the global Muslim population was approximately 1.9 billion in 2019 and is projected to reach 3 billion by 2060, accounting for 31.1% of the world's population, representing a 70% increase from 2015. Furthermore, by 2050, the Muslim population is expected to be predominantly young, with 60% between the ages of 15 and 59, 24% under the age of 15, and 16% over the age of 60. These demographic trends present a substantial opportunity for expanding the halal industry, particularly in the skincare sector, as younger consumers increasingly seek products that align with their religious and ethical values. The rapid population growth is paralleled by a rising demand for halal-certified goods, underscoring the importance of targeted marketing strategies within this sector.

In the literature, "*halal*" is defined as "permissible," while "*haram*" refers to something "forbidden" or "unlawful" (Ahmad et al., 2015; Wilson & Liu, 2011). Halal represents a global industry with promising opportunities as the Muslim population grows. This aligns with trends in which halal skincare brands ensure that all aspects, including ingredients, production, packaging, and storage, are free from animal-derived substances, alcohol, blood, harmful components, and impurities (Anubha, 2021; Respati et al., 2024; Sugibayashi et al., 2019; Supriani et al., 2024). Halal-certified skincare products are not only aimed at Muslim consumers but also attract consumers from diverse backgrounds who seek safe and thoroughly tested skincare products (Amalia et al., 2020; Anggadwita et al., 2019; Huda et al., 2024; Mohezar et al., 2016).

Empirical data suggest that the skincare market represents one of the most promising sectors within the halal industry (Pambekti et al., 2023). Estimates indicate that the market size for halal skincare products ranges between USD 5 billion and USD 14 billion. The increasing demand for skincare products is closely linked to the growing emphasis on personal appearance, which has positioned skincare as a fundamental necessity (Adiba & Wulandari, 2018). This trend is particularly evident in Muslim-majority countries, where consumers exhibit a heightened awareness of skincare products' quality and efficacy and compliance with halal standards. The preference for halal-certified skincare products is deeply rooted in Islamic teachings, as outlined in the Qur'an, which provides clear guidelines regarding permissible and prohibited consumption practices (Bhutto et al., 2022). Consequently, adherence to halal principles has become a critical factor influencing purchasing decisions within this market segment.

Previous research has explored various factors influencing the purchase of halal skincare. For instance, Ahmad et al. (2015) demonstrated that increased religious knowledge shapes consumer attitudes toward a product, influencing purchasing behavior. Another significant factor is the low public awareness of halal product consumption, partially triggered by varying perspectives on halal (Antara et al., 2016; A. Khan et al., 2022). Furthermore, regarding halal literacy, particularly in the context of halal skincare, it is crucial to determine whether potential consumers understand the products they intend to buy, whether these products are genuinely halal, and whether consumers know where to find halal products (Bhutto et al., 2022). Several studies have highlighted the strong correlation between consumer attitudes and purchase intentions toward halal products.

However, prior research has primarily focused on the net effects of various factors without investigating causal complexity. The Theory of Planned Behavior (TPB) suggests that while motivational factors are necessary, they are not sufficient to explain the likelihood of performance likelihood fully (Ajzen, 1991). For example, Bhutto et al. (2022) and Yudha et al. (2024), using a modeling approach, tested TPB and religious commitment (net effect) on halal product adoption. Khan et al. (A. Khan et al., 2022) examined the impact of religiosity (both extrinsic and intrinsic) and halal literacy on halal product purchases using partial least squares structural equation modeling (PLS-SEM). Malik et al. (2019) analyzed the effects of halal certification and halal marketing on halal purchases using covariance-based structural equation modeling. To the best of the author's knowledge, the role of each construct as a necessary condition for purchase intention has largely been overlooked in the literature (Dul, 2016).

Meanwhile, a systematic review by Herjanto et al. (2022) on halal cosmetic consumption shows that the most commonly adopted research methods in this field are SEM and PLS-SEM. Therefore, future studies should utilize diverse data analysis techniques to understand the halal cosmetic market better. To address this gap, we combine partial least squares structural equation modeling (PLS-SEM) and necessary condition analysis (NCA) (Hamdani et al., 2024; Richter et al., 2020; Tho, 2018). This approach will assess the necessity of TPB dimensions such as subjective norms, perceived behavioral

control, and attitudes regarding intentions to purchase halal skincare. Furthermore, key factors such as religion, halal certification, and halal literacy are incorporated to provide deeper insights into the internal and external forces influencing consumer behavior.

2. Materials and Methods

2.1. Sample and measurement

The instrument used in this survey was a structured questionnaire containing several statements for each variable in the research model. This study included seven latent constructs and twenty-six indicators based on previous studies. Several items were designed to reflect the three dimensions of the Theory of Planned Behavior (TPB) and its extensions (see Figure 1). These items were phrased as statements and measured on a Likert scale ranging from (1) "Strongly Disagree" to (5) "Strongly Agree". Moreover, the questionnaire was distributed online via Google Forms and completed by respondents as a self-administered survey. Several Islamic youth communities and institutions were targeted explicitly for sampling, as these groups are often regarded as the primary market segment and key consumers of halal skincare products in Indonesia. The data were collected from various regions on the island of Java, where respondents were invited to participate in the online survey through Google Forms. In total, 233 responses were collected following convenience sampling guidelines (see Table 1).

2.2. Data Analysis Approach

This study adopts an integrated methodological approach by utilizing PLS-SEM in conjunction with NCA to assess the sufficiency and necessity of factors influencing halal skincare purchase intention. The analytical procedures were conducted in alignment with the methodological guidelines established by Richter et al. (2020). The benefits of a complementary approach in assessing the sufficiency and necessity of the intention variable were illustrated by presenting these two distinct analyses. In the first step, PLS-SEM was used to test the research model (Sukhov et al., 2022). PLS-SEM examines the effects of antecedent constructs on attitude and intention and is frequently employed to measure the net effect within a set of models (Hair et al., 2018). In the second step, the scores obtained from the PLS-SEM analysis served as a reference for measuring NCA (Richter et al., 2020). Through PLS-SEM, we identified latent construct attributes contributing to the best possible outcomes for halal skincare purchase intention. In contrast, NCA identified essential attributes that are critical for achieving specific levels of purchase intention in halal skincare products, as well as their degree of necessity (Sukhov et al., 2022).

Table 1. Respondents Frequency

Respondents		Amount	Percentage (%)
Gender	Female	149	63.95
	Male	84	36.05
Age	17-25	100	42.92
	26-35	133	57.08
Education	Bachelor	139	59.66
	Master	94	40.34
Occupation	Student	112	48.07
	Professional	121	51.93
Income	≤ IDR. 1.5 Million	181	77.68
	IDR. 1.6 - 3.1 Million	40	17.17
	IDR.3.1 -5 Million	12	5.15
Domicile	East Java	67	28.76
	West Java	44	18.88
	Special Region of Yogyakarta	58	24.89
	Central Java	11	4.72
	Special Region of Jakarta	18	7.73
	Others	35	15.02

2.3. Hypothesis Proposed

Perceived Behavioral Control (BC). BC encompasses factors that either facilitate or constrain an individual's actions (Endah et al., 2017; Yusfiarto et al., 2023). Ngah et al. (2021) define BC as an individual's perception or evaluation of the ease or difficulty of engaging in a specific behavior. In essence, BC represents an individual's perceived control over their actions, which can substantially influence both behavioral intentions and subsequent decision-making processes (Ajzen, 1991). Within this study, BC pertains to consumers' perceptions of their ability to regulate their purchasing behavior concerning halal skincare products. A considerable body of literature has established a positive association between BC and the purchase intentions of Muslim consumers toward halal products, particularly halal food, as evidenced by the findings of Amalia et al. (Amalia et al., 2020). Furthermore, empirical studies have corroborated that BC exerts a positive influence on the intention to purchase halal skincare products (Ali et al., 2020; Haque et al., 2018). Accordingly, the following hypothesis is formulated:

H1: Perceived behavioral control has a significant positive effect on purchase intention

Attitude (AT). AT refers to the degree to which an individual evaluates a behavior as favorable or unfavorable. A more positive attitude corresponds to a stronger intention to engage in the behavior. Consequently, attitude serves as a fundamental determinant in shaping consumer behavior (Ajzen, 1991, 2005; Sunarsih et al., 2023). Within the Islamic framework, a Muslim's perspective must align with the principles outlined in the Qur'an and Hadith, including the obligation to consume halal products. Individuals who hold a favorable attitude toward halal products are more inclined to purchase certified halal goods (Mukhtar & Butt, 2012; Septiarini et al., 2023). In the context of the TPB, attitude toward purchasing halal skincare products constitutes a critical factor influencing consumer purchasing behavior (Luthfiyah & Salwa, 2019). A study conducted by Aisyah (2016) demonstrated that a strong attitude toward halal skincare products significantly contributes to purchase intention. Likewise, prior research has substantiated that Muslim consumers' attitudes toward halal skincare products exert a substantial impact on their intention to purchase such products (Bhutto et al., 2022; Garg & Joshi, 2018; Suki & Suki, 2018). Based on these findings, the following hypothesis is formulated:

H2: Attitude towards halal skincare has a significant positive effect on purchase intention

Subjective norms (SN). SN is key in evaluating consumers' behavioral intentions to perform specific actions. It refers to an individual's perception of how important people in their lives influence their decision-making regarding what they should or should not do (Ajzen, 1991). Friends, family, co-workers, and the broader community play a role in shaping SN (Ajzen, 2005). This highlights that purchasing decisions are influenced not only by internal individual factors but also by external environmental factors. In the context of skincare products, Muslim consumers are more likely to be motivated to use products with halal branding, as it serves as a crucial religious parameter to consider before making a purchase (Garg & Joshi, 2018). Additionally, Muslim consumers often seek further SN to support their purchasing decisions. A study by Mukhtar and Butt (2012) found that consumers are more inclined to buy halal skincare products when recommended by a greater number of key individuals. Moreover, previous research has confirmed a significant correlation between SN and Muslim purchase intentions (Amalia et al., 2020; Bhutto et al., 2022; Farhat et al., 2019; Saifudin & Puspita, 2020). As a result, the following hypothesis is proposed:

H3: Subjective norms have a significant positive effect on purchase intention
H4: Subjective norms have a significant positive effect on the attitude towards halal skincare
H5: Subjective norms have a significant positive effect on the perceived behavioral control

Halal Literacy (HL). HL pertains to the degree of consumer understanding of halal-haram regulations and their ability to differentiate between halal and haram products. This level of comprehension plays a fundamental role in shaping Muslim consumers' inclination toward purchasing halal-certified products (Antara et al., 2016; Salehudin & Mukhlish, 2012). Aziz and Chok (2013) emphasize that a positive attitude is crucial in determining an individual's understanding of halal principles and products. Within the framework of the TPB, consumers with a favorable attitude are more likely to engage in behaviors that align with their level of knowledge. In this study, HL is regarded as a critical determinant influencing attitudes and behaviors related to the intention to purchase halal products. Empirical findings from previous research consistently highlight a positive correlation between an individual's depth of understanding of the halal concept and their intention to purchase halal

products (Aziz & Chok, 2013; Bashir, 2019; Zakaria et al., 2018; Zuhri et al., 2023). A higher level of halal literacy enhances the likelihood of consumers selecting halal skincare products, underscoring that HL is not merely a measure of knowledge but a decisive factor in purchase intentions. Therefore, the following hypothesis is proposed:

H6: Halal literacy has a significant positive effect on attitudes toward halal skincare

Religiosity (RG). Religiosity refers to the extent to which an individual is committed to their religion and how that commitment is reflected in their behavior (Yusfiarto et al., 2023). Religion is considered an essential element in an individual's decision-making process (Pambekti et al., 2023) and plays a significant role in shaping consumer behavior and attitudes toward goods and services (Khoirunnisa et al., 2023; Mukhtar & Butt, 2012). Garg and Joshi (2018) highlight that religion critically influences consumers' product choices, depending on the religion itself and how individuals interpret and adhere to its teachings. El-Bassiouny (2016) explains that religious Muslim consumers exhibit distinct purchasing intention patterns, demonstrating a stronger tendency to consume halal-certified products and services. Furthermore, Ali et al. (2020) note that Muslims in Indonesia are becoming increasingly religiously conservative, indicating a growing interest in halal products. In line with this, several previous studies have shown that religiosity significantly influences consumer attitudes toward purchasing (Bhutto et al., 2022; Suki & Suki, 2018; Widyanto & Sitohang, 2022). Thus, the following hypothesis is proposed:

H7: Religiosity has a significant positive effect on attitude towards halal skincare

Halal certification (HC). HC refers to the examination and verification of a product to ensure its halal status in terms of raw materials, processing, packaging, and distribution (Widyanto & Sitohang, 2022). Based on Sharia law, as outlined in the Qur'an and As-Sunnah, HC assesses how an organization's internal structure ensures that a product's halal certification is consistently maintained. Halal certification is a crucial factor in a Muslim's purchasing decisions. Hussain et al. (2016) stated that a halal certificate plays a key role in a Muslim's consumption choices, as it provides peace of mind. For Muslim consumers, halal-certified products are perceived as symbols of safety, cleanliness, and high quality (Iranmanesh et al., 2020; Sugibayashi et al., 2019). According to El-Bassiouny (2016), a halal label or emblem facilitates Muslim consumers' purchasing intentions, emphasizing that halal certification is essential to a Muslim's way of life. Furthermore, a study by Malik et al. (2019) found that Muslim millennials are more likely to prefer halal-certified goods and services. Thus, the following hypothesis is proposed:

H8: Halal certification has a significant positive effect on attitudes toward halal skincare
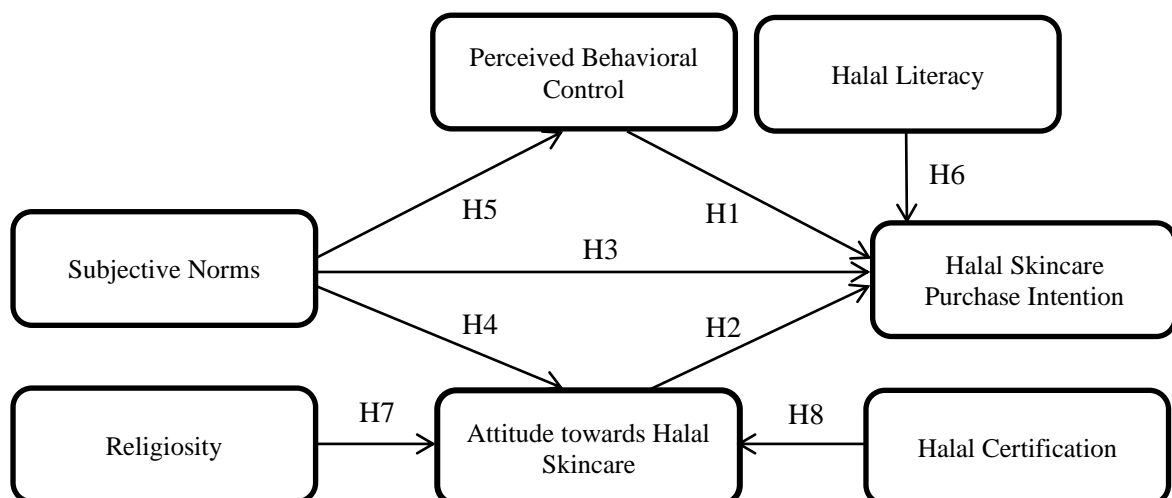

Figure 1. Conceptual Model

3. Results and Discussion

3.1. Screening Data

Prior to presenting the measurement model, the standard method bias (CMB) and sample adequacy ratio were assessed. CMB was evaluated using Harman's single-factor test. The results revealed a seven-

factor structure (with eigenvalues greater than 1), where the maximum variance explained by a single factor was 49.1 percent, with each factor contributing less than 50 percent of the total covariance among the variables. This indicates that common method bias is unlikely to affect the validity of the data (Rodríguez-Ardura & Meseguer-Artola, 2020). Additionally, we conducted the Kaiser-Meyer-Olkin (KMO) test to verify sample adequacy. The KMO result was 0.914 (above the recommended threshold of 0.7), with statistical significance at the 0.001 level, confirming that the sample size meets the criteria for adequacy (Kaiser & Rice, 1974).

3.2. Measurement and Assessment

To ensure the consistency and internal reliability of the measurement model, we conducted a reliability assessment using Cronbach's alpha (α) and composite reliability (CR). Cronbach's alpha evaluates the internal consistency of the constructs by measuring the interrelatedness of the observed indicators, while CR provides a more refined reliability estimate by considering the contribution of each indicator in a latent construct. The findings showed that Cronbach's alpha values ranged from 0.755 to 0.873, while CR values were between 0.857 and 0.913 (see Table 2), confirming the internal consistency reliability of the constructs (α and CR > 0.70), in line with Hair et al. (2019). Given these results, the measurement model is deemed reliable for further analysis, ensuring the validity of subsequent structural relationships examined in the study.

Table 2. Reliability and convergence validity of the outcome

Construct	α	CR	AVE	$\sqrt{AVE}$
Attitude	0.873	0.913	0.725	0.852
Perceived Behavioral Control	0.755	0.857	0.671	0.819
Halal Certification	0.819	0.892	0.733	0.856
Halal Literacy	0.834	0.901	0.752	0.867
Purchase Intention	0.84	0.893	0.676	0.822
Religiosity	0.863	0.902	0.648	0.805
Subjective Norms	0.848	0.907	0.765	0.875

The subsequent test, the Heterotrait-Monotrait Ratio (HTMT), is designed to evaluate the extent to which a construct in the research model differs from other constructs. As suggested by Hair et al. (2019), discriminant validity is established when the HTMT value does not exceed 0.90, while a more stringent threshold of 0.85 indicates a stronger level of discriminant validity. The results of this study indicate that the variables exhibit strong discriminant validity, as evidenced by the AVE values for Attitude (0.852), Perceived Behavioral Control (0.819), Halal Certification (0.856), Halal Literacy (0.867), Purchase Intention (0.822), Religiosity (0.805), and Subjective Norms (0.875). These findings confirm that all variables meet the recommended threshold for acceptable discriminant validity (>0.5) (see Table 3).

Table 3. The Heterotrait-Monotrait Ratio Outcome

Construct	1	2	3	4	5	6	7
Attitude							
Perceived Behavioral Control	0.536						
Halal Certification	0.824	0.729					
Halal Literacy	0.639	0.609	0.639				
Purchase Intention	0.799	0.697	0.729	0.782			
Religiosity	0.782	0.789	0.609	0.659	0.555		
Subjective Norms	0.548	0.890	0.591	0.423	0.876	0.507	

The initial step of the analysis concentrated on evaluating the weight indicators, with a specific focus on the outer loadings. Based on Hair et al. (Hair et al., 2019), the recommended threshold for acceptable item reliability is > 0.708 (see Table 4). The PLS-SEM results indicated that the outer loading values ranged from 0.736 to 0.945, indicating that these indicators have strong and reliable contributions in measuring the constructs they represent. These findings confirm that attitudes, subjective norms, perceived behavioral control, halal certification, religiosity, halal literacy, and purchase intention are crucial in shaping consumers' decision-making and behavior regarding halal skincare products.

Table 4. Item scale and outer loading outcome

Construct and Item Scale	Loadings	Source
Attitude		
AT1: Using halal skincare is a good idea	0.826***	
AT2: I like choosing halal products	0.885***	Iranmanesh
AT3: Skincare products that are labeled halal are essential	0.885***	et al. (2020)
AT4: I always look for halal labels when I buy skincare products	0.808***	
Subjective Norms		
SN1: My family believes that using halal skincare is preferable	0.862***	Ngah et al.
SN2: Most people I look up to prefer halal skincare	0.860***	(2021)
SN3: My close friends feel that I should use halal skincare	0.902***	
Perceived Behavioral Control		
BC1: I can afford a halal skincare brand, although it is more expensive	0.907***	N. Khan et
BC2: Buying halal skincare is my own decision	0.736***	al. (2021)
BC3: If Halal Skincare is available, I will buy products with the Halal brand	0.886***	
Halal Certification		Widyanto
HC1: The halal logo is a crucial factor when selecting a product	0.860***	and
HC2: I make product choices based on whether or not it has a halal logo	0.854***	Sitohang
HC3: I am always cautious when choosing products with a halal logo	0.855***	(2022)
Religiosity		
RG1: My religion is critical to me	0.824***	
RG2: My beliefs are behind my whole approach to life	0.842***	Al Mamun
RG3: Religious beliefs affect all my activities	0.810***	et al. (2019)
RG4: I enjoy gathering time in my religious organization	0.746***	
RG5: I spend time improving my understanding of faith	0.800***	
Halal Literacy		
HL1: I have a clear understanding of Islamic law regarding halal and haram	0.804***	Bhutto et al.
HL2: I am confident in my ability to differentiate between halal and haram	0.900***	(2022)
HL3: I possess good enough knowledge to recognize halal skincare products	0.895***	
Purchase Intention		
PI1: I am willing to purchase halal skincare products in the future	0.779***	Bhutto et al.
PI2: When choosing skincare items, I prioritize halal products	0.876***	(2022)
PI3: I choose halal skincare products even if the brand is less well-known	0.791***	
PI4: I will opt for halal skincare products even if they are priced higher	0.840***	

3.3. Structural Model Assessment

Before conducting hypothesis testing, multicollinearity was tested using the variance inflation factor (VIF) to ensure the regression results would not be biased. Hair et al. (2019) state that the recommended VIF value should be less than 3. The VIF results ranged from 1.000 to 2.441, all below the threshold, confirming that regression bias was unlikely. Additionally, to test the hypotheses, the study used the bootstrapping method with 5,000 iterations, applying a bias-corrected and accelerated confidence interval (BCCI) and considering significance levels with p-values (* p: 0.05, ** p: 0.01, *** p: 0.001). The overall effect values showed promising results (see Table 5). As expected, halal skincare purchase intention was significantly influenced by attitude ($\beta = 0.240$, $p < 0.001$), perceived behavioral control ($\beta = 0.404$, $p < 0.001$), subjective norms ($\beta = 0.129$, $p < 0.05$), and halal literacy ($\beta = 0.221$, $p < 0.001$). Additionally, attitude towards halal skincare purchases was significantly affected by halal certification ($\beta = 0.360$, $p < 0.001$), and subjective norms had a significant effect on perceived behavioral control ($\beta = 0.697$, $p < 0.001$).

Table 5. Direct Effect Outcome

Construct	VIF	t-value	p-value	BCCI
Attitude -> Purchase Intention	2.198	3.749	0.000	0.115; 0.367
Perceived Behavioral Control -> Purchase Intention	2.441	6.941	0.000	0.301; 0.529
Halal Certification -> Attitude	1.916	4.586	0.000	0.218; 0.524
Halal Literacy -> Purchase Intention	1.558	3.875	0.000	0.113; 0.338
Religiosity -> Attitude	1.677	1.978	0.048	0.015; 0.417
Subjective Norms -> Attitude	1.624	5.379	0.000	0.229; 0.484
Subjective Norms -> Perceived Behavioral Control	1.000	13.342	0.000	0.571; 0.782
Subjective Norms -> Purchase Intention	2.301	2.104	0.035	0.008; 0.246

Finally, the assessment of the coefficient of determination (R^2) for the purchase intention construct revealed a satisfactory value, with $R^2 = 0.715$ and an adjusted $R^2 = 0.710$. Furthermore, attitude and perceived behavioral control constructs showed R^2 values of 0.604 and 0.408, respectively. This explanation suggests that the model provides a robust understanding of the factors driving halal skincare purchase intentions, as the model captures a significant portion of the variation (see Table 6 and Figure 2). In addition to R^2, the model's predictive relevance was assessed using Stone–Geisser's Q^2 statistic, which evaluates the model's ability to predict data points outside the sample used to estimate the model. The Q^2 value for the purchase intention variable was 0.472, well above the threshold of 0, indicating that the model possesses high predictive accuracy Hair et al. (2019). A Q^2 value greater than zero demonstrates that the exogenous constructs have substantial predictive relevance for the endogenous variable (Saibil et al., 2023).

Table 6. R^2 and Q^2 outcome

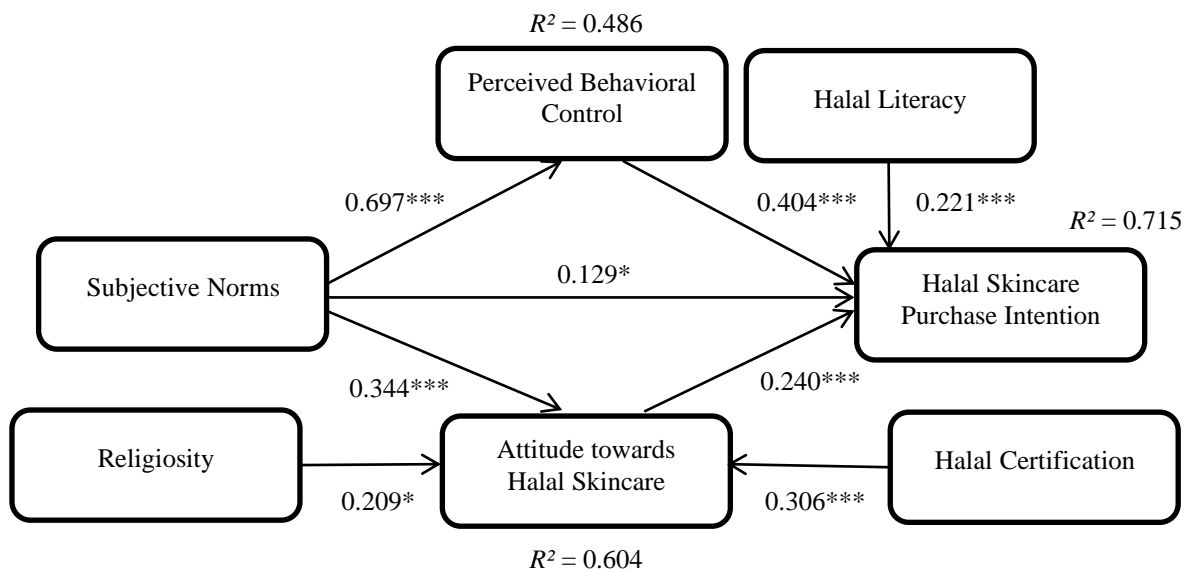| Construct	R^2	R^2 Adjusted	SSO	SSE	Q^2
Attitude	0.604	0.599	932	541.452	0.419
Perceived Behavioral Control	0.486	0.484	699	479.568	0.314
Purchase Intention	0.715	0.710	932	492.261	0.472

Figure 2. Structural model outcome

3.4. NCA Assessment

To determine the necessary conditions for the intention to purchase halal skincare (i.e., perceived behavioral control, subjective norms, attitude, and halal literacy) and attitude toward halal skincare (i.e., halal certification and religiosity), we applied the NCA method (Dul, 2016). This approach identifies conditions that are essential, though not sufficient, for achieving a particular outcome. The NCA process defines a ceiling line separating the observed data from the unobserved area. Two standard techniques for identifying ceiling lines are the ceiling envelopment (a piecewise linear line) using a free disposal hull (CE-FDH) and ceiling regression (a straight line) with a free disposal hull (CR-FDH), with the latter being more adaptable (Dul, 2016; Dul et al., 2020). Figure 3 displays the overall analysis results.

Moreover, we investigated the effect size (d CE-FDH), testing its statistical significance using a recommended random sample size of 10.000 (Dul, 2016; Dul et al., 2020; Richter et al., 2020). For a condition to be deemed necessary, it must meet at least three criteria: theoretical justification, effect size $d > 0$, and a small p-value ($p > 0.05$). The results of the NCA (see Table 7) show that religiosity is the only condition that does not meet these criteria because $d = 0$ and p-value < 0.05 (H7 not supported). Specifically, perceived behavioral control ($d > 0$, $p < 0.05$), subjective norm ($d > 0$, $p < 0.05$), attitude ($d > 0$, $p < 0.05$), and halal literacy ($d > 0$, $p < 0.05$) are necessary for overall halal skincare purchase intention. Also, halal certification ($d > 0$, $p < 0.05$) is necessary for the overall attitude towards halal skincare. Subjective norms are necessary for overall perceived behavioral control ($d > 0$, $p < 0.05$), as

the overall results indicate a small to moderate effect size limit (Dul, 2016; Dul et al., 2020).
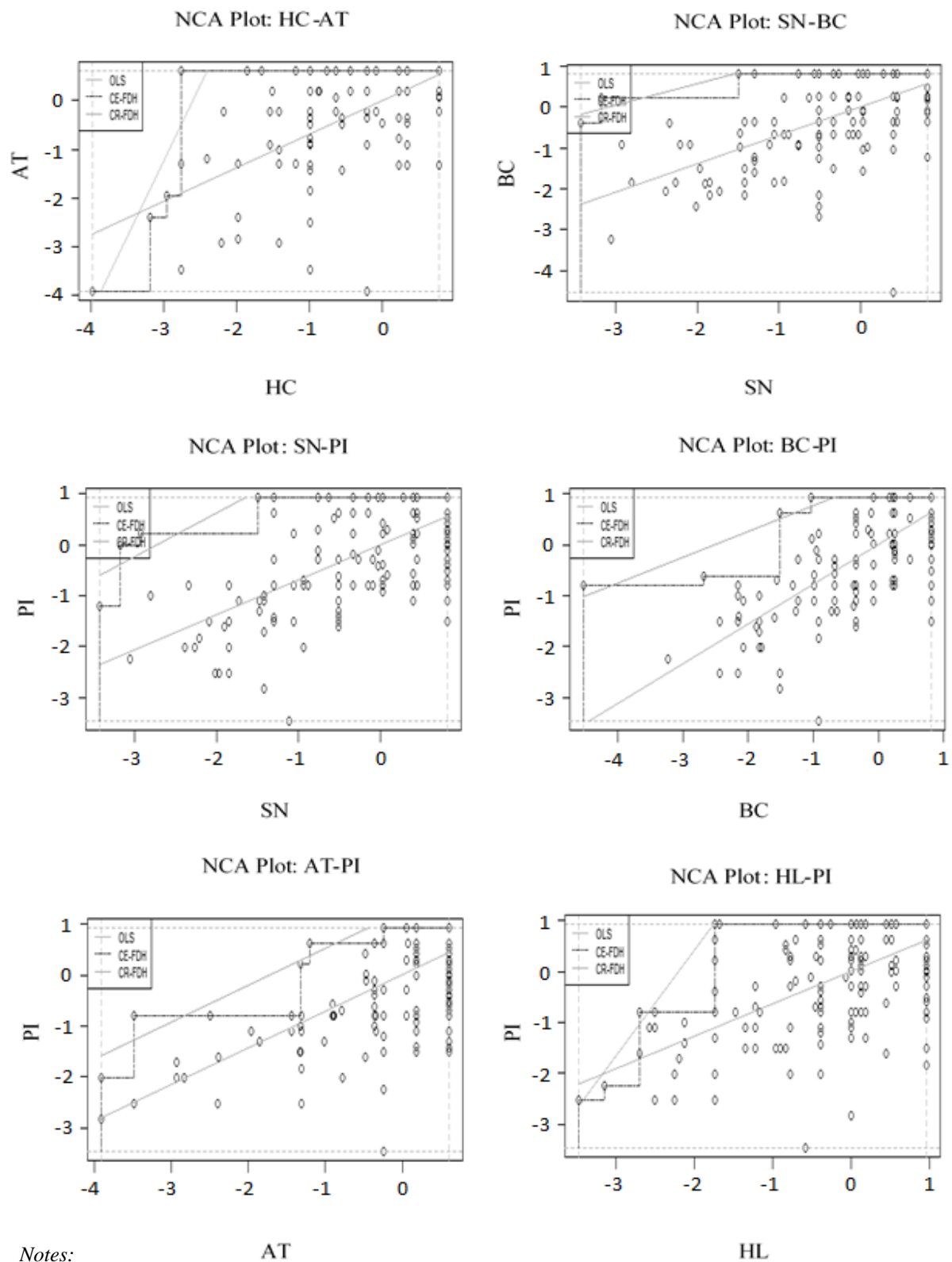
Notes:
SN: Subjective Norms
BC: Perceived Behavioral Control
HC: Halal Certification
AT: Attitudes
HL: Halal Literacy
PI: Purchase Intention

Figure 3. NCA Plot Outcomes

Table 7. NCA effect sizes

Construct	d CE-FDH	d CR-FDH	p-value
Attitude -> Purchase Intention	0.271	0.218	0.000
Halal Literacy -> Purchase Intention	0.216	0.157	0.000
Subjective Norms -> Purchase Intention	0.096	0.072	0.005
Perceived Behavioral Control -> Purchase Intention	0.219	0.160	0.019
Halal Certification -> Attitude	0.221	0.176	0.000
Religiosity -> Attitude	0.000	0.000	1.000
Subjective Norms -> Attitude	0.048	0.034	0.040
Subjective Norms -> Perceived Behavioral Control	0.058	0.040	0.017

Finally, the NCA bottleneck aims to determine the minimum percentage of various proposed variables required to achieve specific levels of Purchase Intention. The findings highlight that Attitude and Perceived Behavioral Control play crucial roles in influencing consumers' purchase decisions, particularly in the context of halal skincare products. As detailed in Table 8, Attitude accounts for 9.4%, serving as the initial determinant in shaping consumer preferences and inclinations toward purchasing halal skincare products. This suggests that while Attitude is necessary, it alone is insufficient to drive higher purchase intentions. Instead, it functions as a foundational factor, shaping consumers' perceptions of halal skincare products regarding trust, ethical considerations, and personal values. On the other hand, Perceived Behavioral Control (PBC) emerges as the most significant determinant, with a necessity level of 65.3%, indicating that a consumer's sense of control over their purchasing decision is a key prerequisite for increased purchase intention.

Table 8. NCA bottleneck Outcome of intention (%)

Purchase Intention	Attitude	Halal Literacy	Subjective Norms	Perceived Behavioral Control
0	NN	NN	NN	NN
10	NN	NN	NN	NN
20	NN	NN	NN	NN
30	NN	17.4	NN	NN
40	9.4	17.4	NN	NN
50	9.4	17.4	NN	NN
60	9.4	17.4	5.8	NN
70	57.3	39.1	5.8	56.5
80	57.3	39.1	11.7	56.5
90	59.9	39.1	45.5	56.5
100	81.3	39.1	45.5	65.3

Note: NN is Not Necessary

The additional findings from the NCA bottleneck analysis (See Table 9) aim to determine the minimum percentage of Subjective Norms, Halal Certification, and Religiosity required to develop a positive Attitude toward halal products. The results indicate that Halal Certification (16.5%−25.6%) serves as a consistent prerequisite for fostering a positive attitude, reaffirming that consumer trust in the halal status of a product heavily depends on the presence of clear and credible certification. In contrast, Subjective Norms (5.8%−45.5%) emerge as a more significant determinant once a fully established positive attitude toward halal skincare products is achieved (at the 100% level). This suggests that as consumer confidence in halal products strengthens, social influences such as family, friends, and broader societal expectations play an increasingly important role in sustaining and reinforcing positive attitudes toward these products.

Table 9. NCA bottleneck Outcome of attitude (%)

Attitude	Subjective Norms	Halal Certification	Religiosity
0	NN	NN	NN
10	NN	16.5	NN
20	NN	16.5	NN
30	NN	16.5	NN
40	NN	21.3	NN
50	NN	25.6	NN
60	NN	25.6	NN
70	NN	25.6	NN
80	NN	25.6	NN
90	5.8	25.6	NN
100	45.5	25.6	NN

Note: NN is Not Necessary

3.5. Hypothesis Discussion

This study emphasizes the importance of essential conditions in fostering a positive attitude toward halal skincare by exploring both internal factors (like religiosity) and external influences (such as halal certification and subjective norms). Consistent with prior research, the PLS-SEM results demonstrate that halal certification and subjective norms positively influence the formation of favorable attitudes toward halal skincare (Bhutto et al., 2022; El-Bassiouny, 2016; Mukhtar & Butt, 2012). Based on these findings, the NCA analysis shows that halal certification and subjective norms are necessary factors, but they contribute at different levels to shaping a positive attitude. The critical threshold for halal certification (16.5 percent) is reached when attitude reaches 10 percent, indicating that exceptional performance (16.5–25.6 percent) is not required to achieve a high positive attitude toward halal skincare products. In contrast, subjective norms require a more substantial influence from close and respected individuals, ranging from 5.8 percent to 45.5 percent, to attain a high level of attitude (90–100 percent).

Contrarily, the relationship between religiosity and attitude toward halal skincare yields intriguing results. When analyzed using the net effect, the relationship is significant at the 0.05 level; however, the NCA analysis indicates that religiosity is not a necessary condition. This suggests that while increased religiosity can contribute to the formation of positive attitudes toward halal skincare products, it is not an essential prerequisite. This finding aligns with previous research, which attributes the growth in halal product consumption in Indonesia to the increasing conservatism of Indonesian Muslims regarding religious practices (Bhutto et al., 2022; Suki & Suki, 2018; Widyanto & Sitohang, 2022). It implies that the development of a positive attitude is driven by the belief that Muslims are religiously obligated to consume halal-certified products while strictly avoiding those containing prohibited ingredients.

It practically implies that halal certification in skincare products guarantees that the product is safe, and halal certificates symbolize safety, cleanliness, and high-quality products. For this reason, skincare product manufacturers must carry out a series of tests and halal authorization processes before the product is ready to be marketed and safe for consumers. This will bring peace and a positive perception to consumers, which can have implications for increasing purchases of halal skincare products. Also, from a consumer social perspective, these findings can emphasize the collaborative approach by skincare companies with individuals who have a wide following, such as religious leaders, to boost product promotion. Because, in Indonesia, Muslims have a strong tendency towards the preferences of religious leaders they trust and respect, the better the attitude of the community, the better the intention of the community to purchase halal skincare products.

In the context of purchase intention, the study findings show the results. First, halal literacy strongly predicts the net effect of halal skincare purchase intention. These results indicate that the level of understanding, knowledge, and ability to distinguish halal products can shape consumer preferences to consume halal products, which supports previous studies (Aziz & Chok, 2013; Bashir, 2019; Zakaria et al., 2018). Furthermore, the NCA analysis was able to deepen the net effect findings, including reaching the middle level (30−60 percent) purchase intention requires the achievement of consumer halal literacy of 17.4 percent, while at the critical point (i.e., medium to high level), at least requires the achievement of consumer halal literacy of 39.1 percent. This information underscores the level of consumer understanding of halal products that can be used as an essential reference to consumer buying

interest in halal skincare. For this reason, manufacturers need to collaborate in comprehensive education and socialization with consumers by increasing consumers' concept and knowledge of halal skincare. The creation of positive preferences through literacy by the company is expected to increase awareness and purchase intention of halal skincare products in Indonesia.

Second, in the context of the TPB dimension, overall, it shows satisfactory results, which significantly positively affect halal skincare purchase intention. The subjective norms construct produces the lowest net effect compared to the perceived behavioral control and attitude constructs. This shows that people who already have an intention of using halal skincare products are not much influenced by the motivation caused by the influence of other people in consuming or buying halal products (Amalia et al., 2020; Bhutto et al., 2022; Farhat et al., 2019; Saifudin & Puspita, 2020). The tendency is more about how individual beliefs can be formed from the perception of internal resources to buy the desired halal product. In addition, a better attitude caused by the social influence of the community and the assurance of safety, cleanliness, and quality can encourage the consumption of halal skincare (Ali et al., 2020; Garg & Joshi, 2018; Suki & Suki, 2018).

Overall, halal skincare companies must respond to these findings with more specific and effective marketing strategies. In their marketing campaigns, companies should explicitly highlight the advantages of halal products based on Islamic guidelines. This can be achieved through clear labeling, certification, and consumer education, which is essential for strengthening positive perceptions compared to non-halal products. Additionally, improving accessibility and affordability is crucial. Companies can expand distribution channels by leveraging e-commerce platforms, partnering with Muslim retail stores, and establishing strategic collaborations with Islamic communities, including pesantren, Muslim youth organizations, and halal influencers. These partnerships enhance brand awareness and build consumer trust through endorsements from credible figures. Optimizing the supply chain from production to distribution is also necessary to ensure seamless product availability without logistical challenges. Strengthening collaboration with Muslim communities enables companies to implement community-based marketing initiatives, such as halal education campaigns and recommendation-based loyalty programs. By implementing these measures, companies can enhance consumer loyalty, strengthen connections with the Muslim community, and drive sustainable growth in the halal skincare market.

Finally, this study also presents significant theoretical implications. The findings validate the overall influence of the examined constructs and assess their relative necessity, thereby advancing the understanding of key determinants shaping the intention to purchase halal skincare products. While prior research has extensively explored constructs such as the Theory of Planned Behavior (TPB), halal certification, religiosity, and halal literacy within the broader halal product context, this study is, to the best of the author's knowledge, the first to elucidate the varying degrees of necessity among these constructs. Moreover, halal skincare remains an underexplored research domain, and the results underscore the need for further scholarly inquiry in this field. These findings contribute to a more comprehensive understanding of the intricate factors that govern consumer decision-making, particularly the essential conditions influencing the intention to purchase halal skincare products. Thus, this study offers a novel perspective on the adoption process of halal products, with a particular emphasis on the halal skincare market in Indonesia.

4. Conclusion

In recent years, the demand for halal products and services has grown significantly, particularly in countries with a predominantly Muslim population. This trend has created new market segmentation opportunities for various industries, including skincare. Given the distinct consumption patterns of Muslim youth, this study examines internal and external factors influencing the purchase intention of halal skincare products. The findings underscore the pivotal role of attitude, halal literacy, subjective norms, and perceived behavioral control in shaping consumer behavior. Additionally, the results highlight that halal literacy and halal certification serve as key determinants driving positive perceptions and purchase intentions among Muslim youth consumers. These findings reinforce the importance of strategic marketing efforts emphasizing halal attributes, credible certification, and consumer education to strengthen market trust and loyalty. As the halal skincare industry expands, companies must adapt to evolving consumer expectations and regulatory standards to maintain competitiveness and ensure long-term growth.

Despite its strong empirical foundation, this study has several limitations that should be acknowledged. The research scope is confined to specific halal skincare brands and focuses solely on

Muslim consumers in Indonesia. Future research should expand this investigation to non-Muslim markets to compare the acceptance of halal skincare products across different cultural and religious contexts. Cross-national studies comparing countries with a Muslim majority and those with a predominantly non-Muslim population could offer deeper insights into the broader market potential. Furthermore, employing alternative analytical approaches, such as split-sample analysis, could help identify variations in consumer behavior across demographic segments. Additionally, case studies on multinational halal skincare brands and the use of longitudinal data could provide a more comprehensive understanding of the determinants and challenges in the development and sustainability of the halal skincare industry. Finally, future studies should explore the impact of government policies, certification standards, and industry regulations on consumer trust and purchasing decisions, ensuring a holistic perspective on the evolving halal skincare market.)

CRediT Authorship Contribution Statement
Annes Nisrina Khoirunnisa: Conceptualization, Writing-Original Draft, Methodology, Validation, Project Administration. **Satomi Ohgata**: Supervision, Review & Editing. **Kharisa Rachmi Khoirunisa**: Writing – Original Draft, Visualization, Funding Acquisition. **Galuh Tri Pambekti**: Methodology, Writing – Review & Editing, Funding Acquisition. **Rizaldi Yusfiarto**: Methodology, Supervision, Writing – Review & Editing, Methodology.

References

Adiba, E. M., & Wulandari, D. A. (2018). Pengaruh halal knowledge, Islamic religiosity, dan attitude terhadap behavior konsumen Muslim generasi Y pengguna kosmetik halal di Surabaya. *INOBIS: Jurnal Inovasi Bisnis Dan Manajemen Indonesia*, *1*(3), 357–369. https://doi.org/10.31842/jurnal-inobis.v1i3.42

Ahmad, A. N., Rahman, A. A., & Rahman, S. A. (2015). Assessing knowledge and religiosity on consumer behavior towards halal food and cosmetic products. *International Journal of Social Science and Humanity*, *5*(1), 10–14. https://doi.org/10.7763/IJSSH.2015.V5.413

Aisyah, M. (2016). Consumer demand on halal cosmetics and personal care products in Indonesia. *Al-Iqtishad: Journal of Islamic Economics*, *9*(1), 125–142. https://doi.org/10.15408/aiq.v9i1.1867

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-t

Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed.). Open University Press.

Al Mamun, A., Masud, M. M., Fazal, S. A., & Muniady, R. (2019). Green vehicle adoption behavior among low-income households: Evidence from coastal Malaysia. *Environmental Science and Pollution Research*, *26*(26), 26708–26725. https://doi.org/10.1007/s11356-019-05908-2

Ali, A., Sherwani, M., Ali, A., Ali, Z., & Sherwani, S. (2020). The moderating role of individualism/collectivism and materialism: An application of the theory of planned behavior (TPB) in halal food purchasing. *Journal of Food Products Marketing*, *26*(9), 581–599. https://doi.org/10.1080/10454446.2020.1846148

Amalia, F. A., Sosianika, A., & Suhartanto, D. (2020). Indonesian millennials' halal food purchasing: Merely a habit? *British Food Journal*, *122*(4), 1185–1198. https://doi.org/10.1108/BFJ-10-2019-0748

Anggadwita, G., Alamanda, D. T., & Ramadani, V. (2019). Halal label vs product quality in halal cosmetic purchasing decisions. *IKONOMIKA: Jurnal Ekonomi Dan Bisnis Islam*, *4*(2), 227–242. https://doi.org/10.24042/febi.v4i2.5897

Antara, P. M., Musa, R., & Hassan, F. (2016). Bridging Islamic financial literacy and halal literacy: The way forward in halal ecosystem. *Procedia Economics and Finance*, *37*(16), 196–202. https://doi.org/10.1016/S2212-5671(16)30113-7

Anubha. (2021). Mediating role of attitude in halal cosmetics purchase intention: An ELM perspective. *Journal of Islamic Marketing*, *14*(3), 645–679. https://doi.org/10.1108/JIMA-04-2021-0112

Aziz, Y. A., & Chok, N. V. (2013). The role of halal awareness, halal certification, and marketing components in determining halal purchase intention among non-Muslims in Malaysia: A structural equation modeling approach. *Journal of International Food and Agribusiness Marketing*, *25*(1), 1–23. https://doi.org/10.1080/08974438.2013.723997

Bashir, A. M. (2019). Effect of halal awareness, halal logo and attitude on foreign consumers' purchase intention. *British Food Journal*, *121*(9), 1998–2015. https://doi.org/10.1108/BFJ-01-2019-0011

Bhutto, M. Y., Ertz, M., Soomro, Y. A., Khan, M. A. A., & Ali, W. (2022). Adoption of halal cosmetics:

Extending the theory of planned behavior with moderating role of halal literacy (evidence from Pakistan). *Journal of Islamic Marketing*, *14*(6), 1488–1505. https://doi.org/10.1108/JIMA-09-2021-0295

Dul, J. (2016). Necessary condition analysis (NCA). *Organizational Research Methods*, *19*(1), 10–52. https://doi.org/10.1177/1094428115584005

Dul, J., van der Laan, E., & Kuik, R. (2020). A statistical significance test for necessary condition analysis. *Organizational Research Methods*, *23*(2), 385–395. https://doi.org/10.1177/1094428118795272

El-Bassiouny, N. (2016). Where is "Islamic marketing" heading? *Journal of Business Research*, *69*(2), 569–578. https://doi.org/10.1016/j.jbusres.2015.05.012

Endah, N., Daryanti, S., & Hati, S. R. H. (2017). Young adult Muslim consumer intention to purchase halal cosmetics: Application of the theory of planned behavior. *Proceedings of the International Conference on Management, Economics, and Social Development (ICMESD)*, *21*, 569–573. https://doi.org/10.2991/icmesd-17.2017.102

Farhat, K., Aslam, W., & Sany Sanuri, B. M. M. (2019). Predicting the intention of generation M to choose family takaful and the role of halal certification. *Journal of Islamic Marketing*, *10*(3), 724–742. https://doi.org/10.1108/JIMA-12-2017-0143

Garg, P., & Joshi, R. (2018). Purchase intention of "halal" brands in India: The mediating effect of attitude. *Journal of Islamic Marketing*, *9*(3), 683–694. https://doi.org/10.1108/JIMA-11-2017-0125

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. (2018). *Advanced Issues in Partial Least Squares Structural Equation Modeling*. Sage. https://doi.org/10.1007/978-3-319-05542-8_15-1

Hamdani, L., Sunarsih, S., Yusfiarto, R., Rizal, A., & Khoirunnisa, A. N. (2024). Social media, trust and intention to pay zakat through institution: lessons from Indonesian experience. *Journal of Islamic Marketing*, *15*(9), 2399–2418. https://doi.org/10.1108/JIMA-01-2023-0016

Haque, A., Anwar, N., Tarofder, A. K., Ahmad, N. S., & Sharif, S. R. (2018). Muslim consumers' purchase behavior towards halal cosmetic products in Malaysia. *Management Science Letters*, *8*(12), 1305–1318. https://doi.org/10.5267/j.msl.2018.9.009

Herjanto, H., Amin, M., & Karmagatri, M. (2022). A systematic review on halal cosmetic consumption: Application of theory-method-context-attributes-decision-outcome framework. *Journal of Islamic Accounting and Business Research*, *13*(5), 767–791. https://doi.org/10.1108/JIABR-12-2021-0315

Huda, I. A. S., Saadah, M., Sugiarto, A., Bin Ibrahim, M. H., Prasad, R. R., Putra, A. K., & Budianto, A. (2024). Revealing halal certification oversight gaps for MSEs through ArcGIS dashboard integration. *Indonesian Journal of Halal Research*, *6*(2), 58–69. https://doi.org/10.15575/ijhar.v6i2.33308

Hussain, I., Rahman, S., Zaheer, A., & Saleem, S. (2016). Integrating factors influencing consumers' halal products purchase: Application of the theory of reasoned action. *Journal of International Food and Agribusiness Marketing*, *28*(1), 35–58. https://doi.org/10.1080/08974438.2015.1006973

Iranmanesh, M., Mirzaei, M., Parvin Hosseini, S. M., & Zailani, S. (2020). Muslims' willingness to pay for certified halal food: An extension of the theory of planned behaviour. *Journal of Islamic Marketing*, *11*(1), 14–30. https://doi.org/10.1108/JIMA-03-2018-0049

Kaiser, H. F., & Rice, J. (1974). Little Jiffy, Mark IV. *Educational and Psychological Measurement*, *34*(1), 111–117. https://doi.org/10.1177/001316447403400115

Khan, A., Arafat, M. Y., & Azam, M. K. (2022). Role of halal literacy and religiosity in buying intention of halal branded food products in India. *Journal of Islamic Marketing*, *13*(2), 287–308. https://doi.org/10.1108/JIMA-08-2019-0175

Khan, N., Sarwar, A., & Tan, B. C. (2021). *Determinants of purchase intention of halal cosmetic products among Generation Y consumers*. *12*(8), 1461–1476. https://doi.org/10.1108/JIMA-11-2019-0248

Khoirunnisa, A. N., Salsabiil, U. Z., Sodik, F., Dewanti, N. S., & Yusfiarto, R. (2023). Linking religiosity to socio-entrepreneurship intention: A case of Muslim youth in Indonesia. *Journal of Islamic Monetary Economics and Finance*, *9*(2), 225–250. https://doi.org/10.21098/jimf.v9i2.1647

Luthfiyah, H., & Salwa, S. (2019). Prediction of halal cosmetics purchasing by combining theory of

planned behavior and religiosity. *Proceedings of the International Conference on Medical and Health Sciences*, 4–17. https://doi.org/10.33422/icmhs.2019.03.153

Malik, R. F., Hermawan, A., & Asnawi, Y. H. (2019). The effect of halal awareness, halal certification and halal marketing toward halal purchase intention of fast food among Muslim Millennials generation. *Russian Journal of Agricultural and Socio-Economic Sciences*, *90*(6), 76–83. https://doi.org/10.18551/rjoas.2019-06.11

Mohezar, S., Zailani, S., & Zainuddin, Z. (2016). Halal cosmetics adoption among young Muslim consumers in Malaysia: Religiosity concern. *Global Journal Al-Thaqafah*, *6*(1), 47–59. https://doi.org/10.7187/GJAT10220160601

Mukhtar, A., & Butt, M. M. (2012). Intention to choose halal products: The role of religiosity. *Journal of Islamic Marketing*, *3*(2), 108–120. https://doi.org/10.1108/17590831211232519

Ngah, A. H., Gabarre, S., Han, H., Rahi, S., Al-Gasawneh, J. A., & Park, S. H. (2021). Intention to purchase halal cosmetics: Do males and females differ? A multigroup analysis. *Cosmetics*, *8*(1), 19. https://doi.org/10.3390/cosmetics8010019

Pambekti, G. T., Nugraha, S. S., & Yusfiarto, R. (2023). Muslim women switching intention to halal cosmetic: Push-pull-mooring model application. *Journal of Islamic Monetary Economics and Finance*, *9*(2), 337–360. https://doi.org/10.21098/jimf.v9i2.1633

Pew Research Center. (2017). *Why Muslims are the world's fastest-growing religious group*.

Respati, T., Jamilah, L., Alamsyah, I. F., & Abdulhadi, A. (2024). Perception of halal cosmetics consumers towards halal awareness in online social network: Study in Malaysia and Indonesia. *Indonesian Journal of Halal Research*, *6*(1), 46–57. https://doi.org/10.15575/ijhar.v6i1.33326

Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: guidelines for the combined use of PLS-SEM and NCA. *Industrial Management & Data Systems*, *120*(12), 2243–2267. https://doi.org/10.1108/IMDS-11-2019-0638

Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). Editorial: How to prevent, detect and control common method variance in electronic commerce research. *Journal of Theoretical and Applied Electronic Commerce Research*, *15*(2), i–v. https://doi.org/10.4067/S0718-18762020000200101

Saibil, D. I., Khoirunnisa, A. N., & Yusfiarto, R. (2023). From Cash to Cashless: Understanding Users' Switching Intentions from Cash to Mobile Payment Applications. *Vision*, *0*(0). https://doi.org/10.1177/09722629231197336

Saifudin, S., & Puspita, R. E. (2020). Predicting the intention of millennial Muslims to visit halal tourism. *Equilibrium: Jurnal Ekonomi Syariah*, *8*(1), 129. https://doi.org/10.21043/equilibrium.v8i1.7322

Salehudin, I., & Mukhlish, B. M. (2012). Pemasaran halal: Konsep, implikasi dan temuan di lapangan. In *Dulu mendengar sekarang bicara: Kumpulan tulisan ekonom muda FEUI* (pp. 293–305). https://doi.org/10.2139/ssrn.1752567

Septiarini, D. F., Ratnasari, R. T., Salleh, M. C. M., Herianingrum, S., & Sedianingsih, S. (2023). Drivers of behavioral intention among non-Muslims toward halal cosmetics: Evidence from Indonesia, Malaysia, and Singapore. *Journal of Islamic Accounting and Business Research*, *14*(2), 230–248. https://doi.org/10.1108/JIABR-02-2021-0064

Sugibayashi, K., Yusuf, E., Todo, H., Dahlizar, S., Sakdiset, P., Arce, F. J., & See, G. L. (2019). Halal cosmetics: A review on ingredients, production, and testing methods. *Cosmetics*, *6*(3), 37. https://doi.org/10.3390/cosmetics6030037

Sukhov, A., Olsson, L. E., & Friman, M. (2022). Necessary and sufficient conditions for attractive public transport: Combined use of PLS-SEM and NCA. *Transportation Research Part A: Policy and Practice*, *158*, 239–250. https://doi.org/10.1016/j.tra.2022.03.012

Suki, N. M., & Suki, N. M. (2018). Halal cosmetic products: Do knowledge and religiosity affect consumers' attitude and intention to use? *International Journal of Engineering & Technology*, *7*, 764–767. https://doi.org/10.14419/ijet.v7i4.38.27540

Sunarsih, S., Hamdani, L., Rizal, A., & Yusfiarto, R. (2023). Motivational factors to paying zakat through institutions: A multigroup analysis of urban and suburban muzakki based on digital payment scheme. *Journal of Islamic Accounting and Business Research*. https://doi.org/10.1108/JIABR-12-2022-0333

Supriani, I., Ninglasari, S. Y., & Sri, I. (2024). How social media influencers form Muslim consumers' halal cosmetics purchase intention: Religiosity concern. *Journal of Islamic Marketing*. https://doi.org/10.1108/JIMA-02-2024-0085

Tho, N. D. (2018). Firm capabilities and performance: A necessary condition analysis. *Journal of

Management Development, *37*(4), 322–332. https://doi.org/10.1108/JMD-06-2017-0204

Widyanto, H. A., & Sitohang, I. A. T. (2022). Muslim millennial's purchase intention of halal-certified cosmetics and pharmaceutical products: the mediating effect of attitude. *Journal of Islamic Marketing*, *13*(6), 1373–1394. https://doi.org/10.1108/JIMA-04-2020-0117

Wilson, J. A. J., & Liu, J. (2011). The challenges of Islamic branding: Navigating emotions and halal. *Journal of Islamic Marketing*, *2*(1), 28–42. https://doi.org/10.1108/17590831111115222

Yudha, A. T. R. C., Huda, N., Maksum, M., Sherawali, S., & Wijayanti, I. (2024). The moderating effect of religiosity on fashion uniqueness and consciousness in halal fashion purchase. *Indonesian Journal of Halal Research*, *6*(2), 70–83. https://doi.org/10.15575/ijhar.v6i2.34614

Yusfiarto, R., Nugraha, S. S., Mutmainah, L., Berakon, I., Sunarsih, S., & Nurdany, A. (2023). Examining Islamic capital market adoption from a socio-psychological perspective and Islamic financial literacy. *Journal of Islamic Accounting and Business Research*, *14*(4), 574–594. https://doi.org/10.1108/JIABR-02-2022-0037

Zakaria, Z., Abdul Majid, M. D., Ahmad, Z., Jusoh, Z., & Zakaria, N. Z. (2018). Influence of halal certification on customers' purchase intention. *Journal of Fundamental and Applied Sciences*, *9*(5S), 772–787. https://doi.org/10.4314/jfas.v9i5s.55

Zuhri, S., Erwan, F., Syahputra, R. A., Sentia, P. D., & Noprita, Z. (2023). Structural equation modeling analysis of purchase behavior of halal products. *Indonesian Journal of Halal Research*, *5*(1), 12–20. https://doi.org/10.15575/ijhar.v5i1.20170

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